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Please mark the BASIN REPORT(S) you would like to receive.

### BASIN REPORTS:

☐ G - General Outlook Report (a general statewide narrative report contained in the same mailing as individual basin reports)

☐ #1 - Upper Columbia Basin

☐ #2 - Clearwater River Basin

☐ #3 - Salmon River Basin

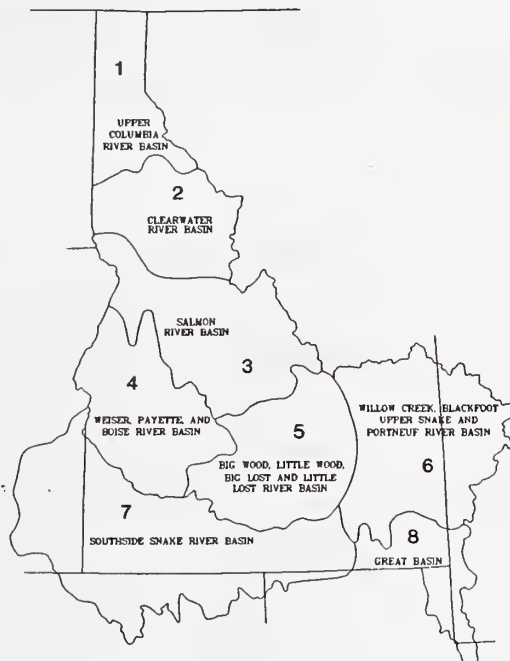
☐ #4 - Weiser, Payette, and Boise River Basin

☐ #5 - Big Wood, Little Wood, Big Lost, and Little Lost River Basin

☐ #6 - Willow Creek, Blackfoot, Upper Snake, and Portneuf River Basin

☐ #7 - Southside Snake River Basin

☐ #8 - Great Basin



### OTHER REPORTS:

☐ - Annual Data Summary (published at the end of each water year, containing individual snow course measurements, SNOTEL readings, and long term averages)

☐ - Fact Sheet (preliminary statewide snow course data - snow depth/water content - mailed around the 5th of each month, Jan-Jun)

All of the above reports are available on the Centralized Forecast System (CFS) computer in Portland, Oregon. A terminal or computer with communication software, modem and phone line are required.

☐ Yes, I am interested in computer access to snow survey information.

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# GENERAL OUTLOOK

## -IDAHO-

### SUMMARY

JUNE 1, 1991

COOL, WET CONDITIONS DOMINATED MAY WEATHER PATTERNS THROUGHOUT IDAHO, CAUSING HIGH ELEVATION SNOWPACKS TO PERSIST LATER THAN NORMAL ACROSS THE STATE. THE WATER SUPPLY OUTLOOK, HOWEVER, REMAINS SIMILAR TO PREVIOUS REPORTS. NORTHERN IDAHO WATER SUPPLIES SHOULD BE EXCELLENT THIS YEAR. WATER USERS ON THE PAYETTE AND SNAKE RIVERS SHOULD HAVE ADEQUATE SUPPLIES, WHILE THE REST OF CENTRAL AND SOUTHERN IDAHO WILL SEE WELL BELOW NORMAL RUNOFF. MANY RESERVOIRS IN THE SOUTHERN HALF OF THE STATE REMAIN CRITICALLY LOW. IRRIGATORS SHOULD STAY IN CLOSE TOUCH WITH THEIR LOCAL WATER DISTRICTS AND SCS FIELD OFFICES FOR CONSERVATION ADVICE AND UPDATED STREAMFLOW CONDITIONS.

### SNOWPACK

Low and mid-elevation snowpacks are depleted across Idaho and western Wyoming, but high elevation snowpacks are persisting later than normal due to a cool, wet spring. Apparent increases in the June 1 snowpack over May 1 (expressed as percent of average) are the result of delayed snowmelt and cool temperatures rather than additional accumulation. Northern Idaho snowpacks are currently near to above normal while the rest of the state reports below normal conditions. Snowpack is 76% of normal in the Salmon basin, 54% in the Payette, 72% in the Boise, 66% in the Big Wood, 69% in the Henry's Fork, and 94% in the Snake above Palisades. The remaining snowpack, however, will melt quickly with the onset of warm weather, and the summer runoff is still expected to be below to well below normal throughout central and southern Idaho.

### PRECIPITATION

Abundant precipitation fell across all of Idaho and western Wyoming during May. Many mountain SNOTEL sites recorded twice the normal amount for the month. Valley stations also received above normal May precipitation. Boise received 1.57 inches for 157% of the May average, Lewiston received 265% of normal, and Pocatello received 252%. Temperatures were below normal for May throughout the state. The cool temperatures combined with abundant precipitation reduced early season irrigation demands -- helping to extend limited water supplies.

## RESERVOIRS

Reservoirs continued to fill during May, but most reservoirs are still below the average June 1 level. Priest and Coeur d'Alene Lakes are below normal while Dworshak (105% of average, 91% full) and Pend Oreille (106% of average, 87% full) are above. The Payette system is above average (85% full, 108% of normal), but the Boise System is only 64% of average (53% full). The upper Snake and Henry's Fork reservoirs are above average, Ririe is 90% of average, and Blackfoot is only 50% of average (45% full). Reservoirs in the Wood, Lost, Oakley, Salmon Falls and Owyhee basins are all below normal; critical areas include Magic (19% of average, 21% full), Salmon Falls (41% of average, 21% full), Oakley (44% of average, 24% full), and Owyhee (53% of average, 45% full). Serious irrigation shortages are likely in many areas across central and southern Idaho.

## STREAMFLOW

Streamflow during the month of May was well below normal throughout central and southern Idaho and near to below normal in northern Idaho and on the upper Snake River. This was the result of below normal snowpacks combined with cooler than normal temperatures, delaying the high elevation snowmelt. The May volume for the Boise River at Boise was only 44% of average, and the Salmon River at Whitebird was 59% of average. As of early June, sufficient snowpack remains at the higher elevations in the northern and central mountains as well as the upper Snake basin to produce significant streamflow rises when warm temperatures return. Seasonal runoff volume, however, is still expected to be well below normal in most areas of the state.

## RECREATIONAL OUTLOOK

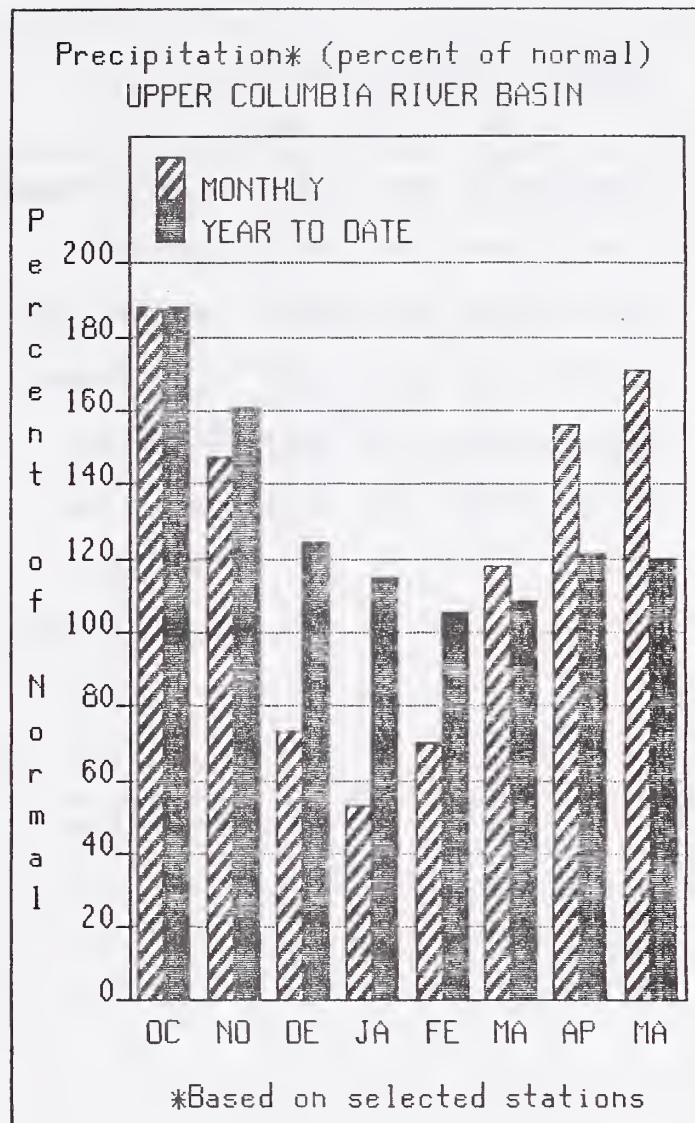
May continued the cool, wet pattern of April, delaying snowmelt in the high elevations across the state. This is good news for whitewater boaters, as the persisting snowpack will extend the boating season later into the summer on northern and central mountain streams. River running should be excellent in northern Idaho, where the Moyie, St. Joe, Lochsa and Selway rivers boasted near average snow accumulation this year. Due to above average reservoir storage, boaters can expect excellent streamflows in the Payette drainage. The delayed snowmelt should provide good flows in the Salmon River drainage through most of June and into July.

## OTHER INFORMATION

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# Upper Columbia River Basin

June 1, 1991



## WATER SUPPLY OUTLOOK

May precipitation was above normal in the Idaho panhandle. Cool temperatures have prolonged the snowmelt season, and snowpacks now range from 93 to 115% of average in the basin. Reservoir storage is near average, and adequate water supplies are expected throughout the Idaho panhandle in the 1991 season.

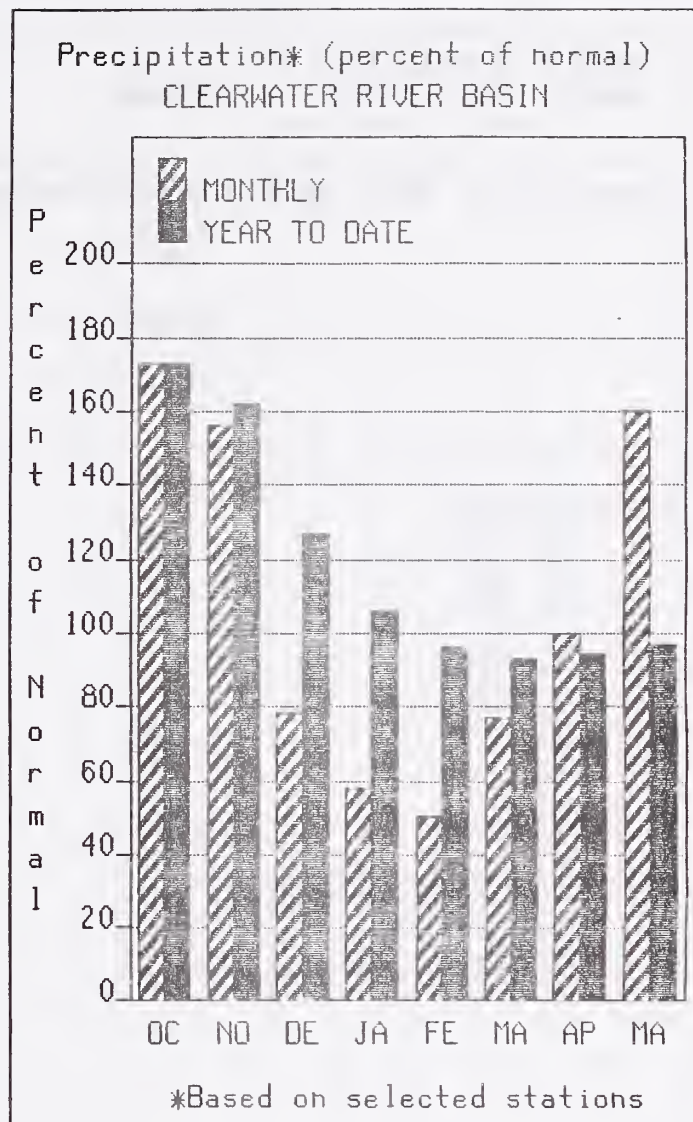
# UPPER COLUMBIA RIVER BASIN

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS			
RESERVOIR	USEABLE : CAPACITY:	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.	WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF ----- LAST YR. AVERAGE	
HUNGRY HORSE	3451.0	2324.0	2798.0	2663.0	Kootenai ab Bonners Ferry	17	145	158
FLATHEAD LAKE	1791.0	1546.0	1532.0	1468.0	Moyie River	1	126	214
PEND OREILLE	1561.2	1355.0	1188.7	1278.5	Pend Oreille River	48	108	115
NOXON RAPIDS	335.0	331.3	331.3	270.4	Clark Fork River	35	115	100
COEUR D'ALENE	291.2	296.2	321.2	353.9	Priest River	2	101	92
PRIEST LAKE	97.7	110.0	92.0	123.5	Rathdrum Creek	0	0	0
					Hayden Lake	0	0	0
					Coeur d'Alene River	3	104	97
					St. Joe River	3	122	115
					Spokane River	6	117	110
					Palouse River	0	0	0

The average is computed for the 1961-1985 base period.

# Clearwater River Basin

June 1, 1991



## WATER SUPPLY OUTLOOK

Above normal precipitation and cool temperatures were recorded over the Clearwater basin during May, ensuring adequate water supplies for the coming season. Currently, snowpacks range from 75% of average in the Selway basin to 103% in the North Fork Clearwater basin. Storage is 105% of normal (91% of capacity) in Dworshak Reservoir. The whitewater boating season should be excellent and prolonged on the Lochsa and Selway Rivers.

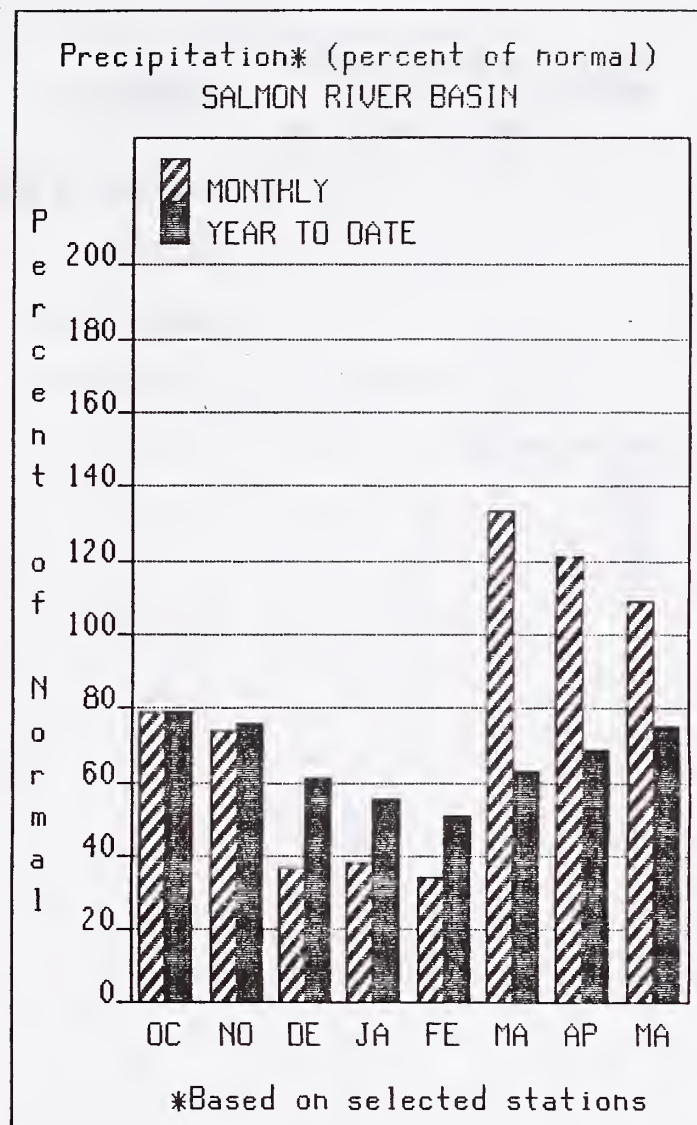
# CLEARWATER RIVER BASIN

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS			
RESERVOIR	USEABLE : CAPACITY:	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.	WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	% OF AVERAGE
DWORSHAK	3467.8	3138.6	3294.0	2987.3	North Fork Clearwater	8	116	103
					Lochsa River	3	119	84
					Selway River	1	0	75
					Clearwater River	11	121	101

The average is computed for the 1961-1985 base period.

# Salmon River Basin

June 1, 1991



## WATER SUPPLY OUTLOOK

Cool temperatures and above normal precipitation for the third consecutive month have delayed the normal snowmelt process in the higher elevations. Snowpacks currently range from 113% of average in the Lemhi basin to 76% of average in the Salmon basin above Whitebird. As a result, summer runoff should extend later into the season than originally expected, benefitting irrigators and whitewater boaters. All water users should be prepared, however, for lower than normal peak flows and seasonal volumes, with low base flows expected later this summer.

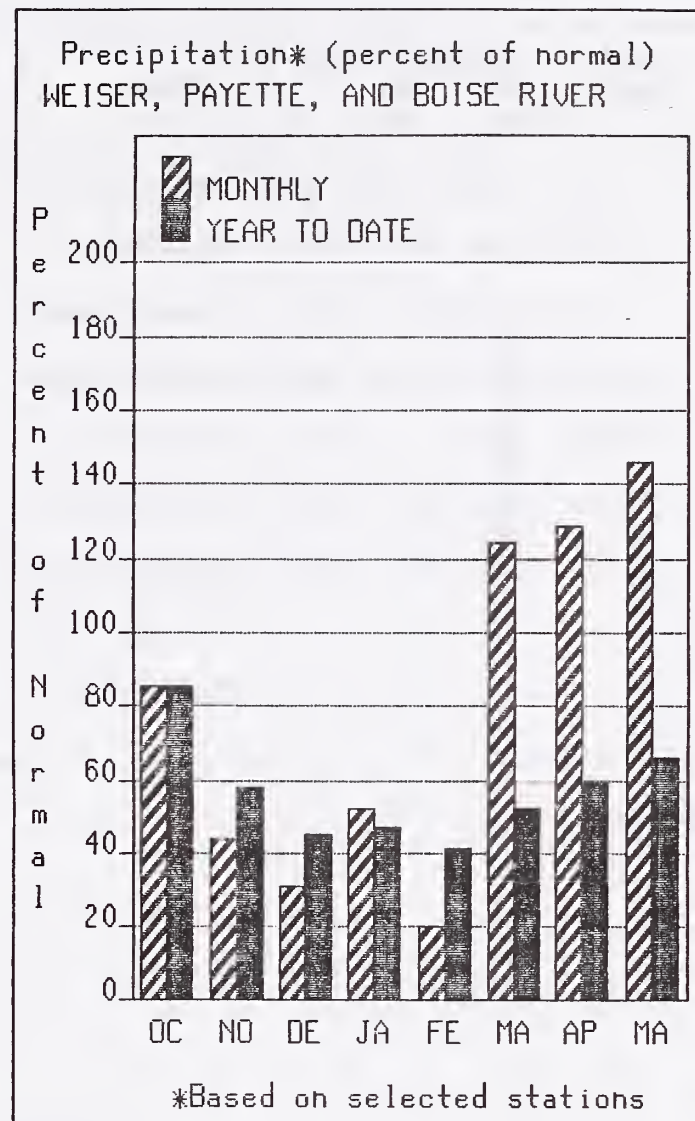
# SALMON RIVER BASIN

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS		
RESERVOIR	USEABLE :	** USEABLE STORAGE **			WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF
	CAPACITY:	THIS	LAST				----- LAST YR. AVERAGE
	:	YEAR	YEAR	AVG.			
					Salmon River ab Salmon	5	219 99
					Lemhi River	1	184 113
					Salmon River Total	13	232 80

The average is computed for the 1961-1985 base period.

# Weiser, Payette, and Boise River Basin

June 1, 1991



## WATER SUPPLY OUTLOOK

Above normal precipitation and cool temperatures during May have delayed the melt of the mountain snowpack, but conditions are still well below normal. Currently, snowpacks range from 52% of average in the South Fork Payette basin to 84% in the South Fork Boise basin. Reservoir storage is slowly increasing, with 108% of average storage reported in the Payette basin (85% of capacity), but only 64% in the Boise basin (53% of capacity). Summer streamflow volumes will still be well below normal. While irrigation supplies should be adequate in the Payette River basin, water users in the Boise system should expect a significant reduction in their supply this year. The Payette River system should have an excellent whitewater boating season due to the abundant storage in Cascade and Deadwood reservoirs. All water users should keep in touch with their local irrigation district and SCS field office for more specific information.

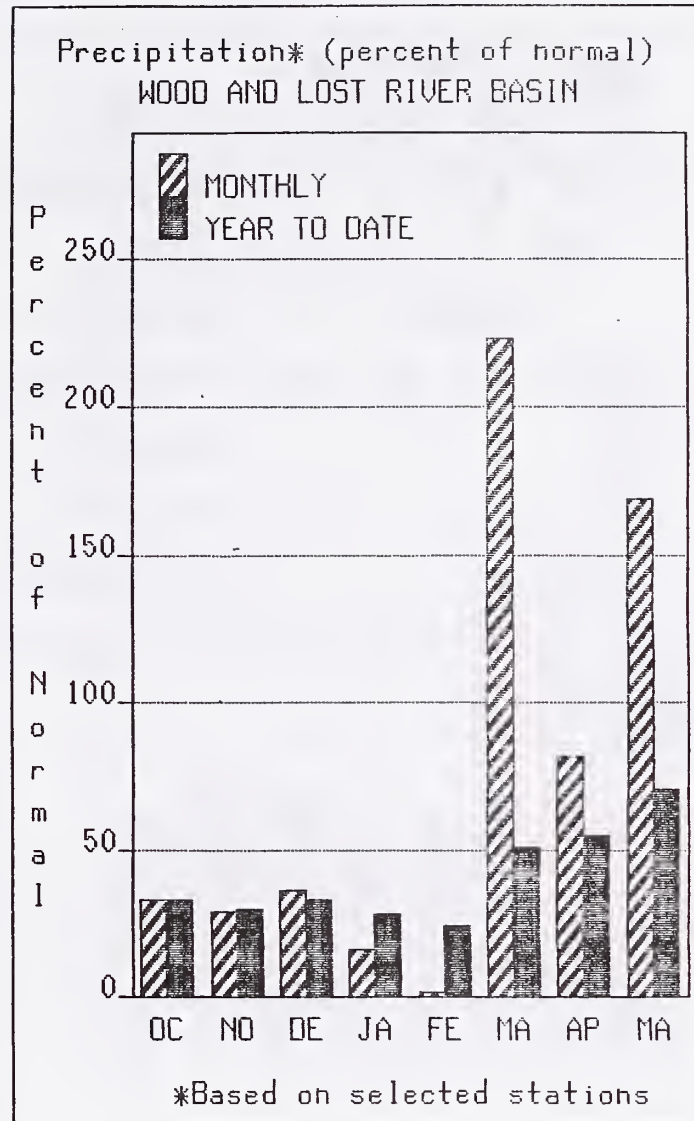
# WEISER, PAYETTE, AND BOISE RIVER BASIN

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS			
RESERVOIR	USEABLE : CAPACITY :	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.	WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	% OF AVERAGE
MANN CREEK	11.3	11.5	11.3	10.8	Mann Creek	1	0	0
CASCADE	703.2	611.6	697.1	548.7	Weiser River	3	0	0
DEADWOOD	162.0	125.9	150.8	136.2	North Fork Payette	5	545	58
ANDERSON RANCH	464.2	228.7	341.3	413.3	South Fork Payette	5	256	52
ARROWROCK	286.6	23.7	80.9	216.3	Payette River Total	10	324	54
LUCKY PEAK	307.0	291.8	293.7	225.9	Middle & North Fork Boise	6	232	69
LAKE LOWELL (DEER FLAT)	177.0	110.5	107.9	159.0	South Fork Boise River	4	210	84
					Boise River Total	8	234	72
					Canyon Creek	0	0	0

The average is computed for the 1961-1985 base period.

# Big Wood, Little Wood, Big Lost, and Little Lost River Basin

June 1, 1991



## WATER SUPPLY OUTLOOK

Above normal precipitation and cooler than average temperatures during May have provided some relief to irrigators hoping to stretch their meager water supply this summer. Snowpacks have increased in terms of the percent of normal due to the delayed snowmelt in the higher elevations of the basin. The snowpack is currently 66% of the June 1 average in the Big Wood basin and 111% of average in the Big Lost basin. Extremely low storage in Magic reservoir (19% of average, 17% of capacity) may be improved by higher streamflows if temperatures increase, but the summer volume will still be well below normal. All water users in the Wood and Lost River basins should be prepared for **CRITICALLY SHORT WATER SUPPLIES** and should keep in touch with their local irrigation district and SCS field office for more specific information.

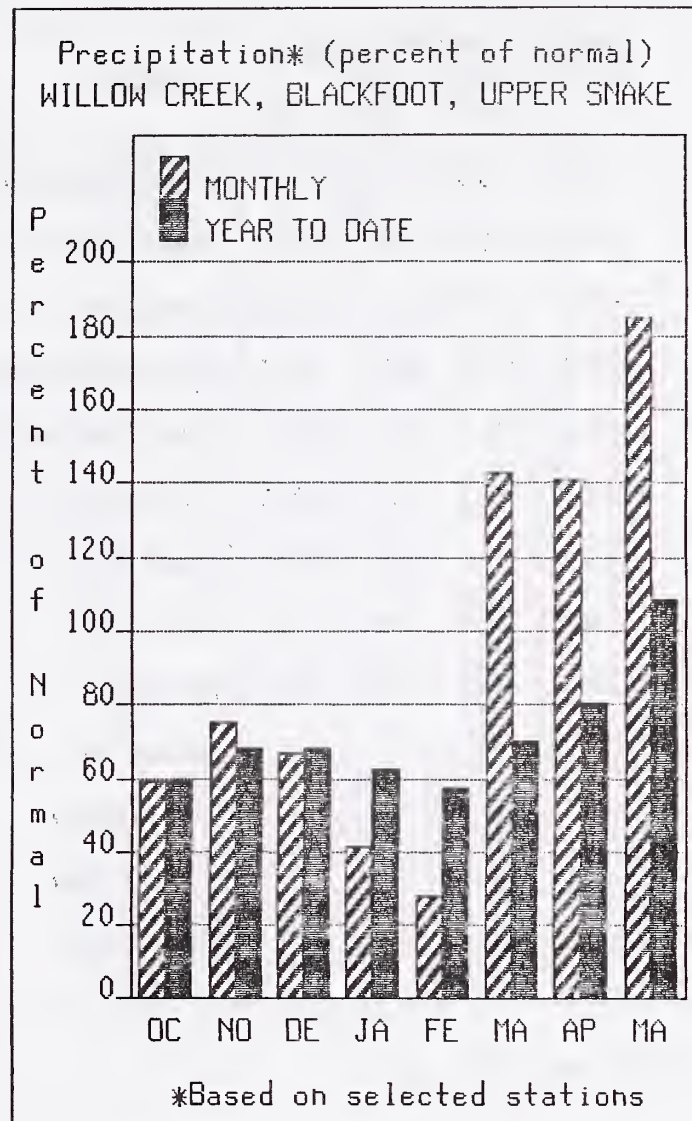
# BIG WOOD, LITTLE WOOD, BIG LOST, AND LITTLE LOST RIVER BASIN

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS			
RESERVOIR	USEABLE : CAPACITY:	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.	WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	% OF AVERAGE
MAGIC	191.5	32.6	41.9	173.8	Big Wood ab Magic	9	199	76
LITTLE WOOD	30.0	26.3	21.7	28.0	Camas Creek	1	0	0
CAREY VALLEY		NO REPORT			Big Wood Total	10	199	76
MACKAY	44.5	28.8	22.4	33.6	Little Wood River	2	0	0
					Fish Creek	0	0	0
					Big Lost River	3	0	111
					Little Lost River	1	0	0

The average is computed for the 1961-1985 base period.

# Willow Creek, Blackfoot, Upper Snake, and Portneuf River Basin

June 1, 1991



## WATER SUPPLY OUTLOOK

Eastern Idaho and the upper Snake River basin in western Wyoming received about twice the normal precipitation during May. Cool temperatures have delayed the high elevation snowmelt, and the mountain snowpack is currently 69% of average in the Henry's Fork basin and 94% in the Snake above Palisades. Summer streamflow is still expected to be below normal. The combined reservoir storage is above normal (103% of average, 74% of capacity) for nine key reservoirs on the Snake mainstem. Blackfoot Reservoir, however, is critically low (50% of average, 45% full), and water users in that basin may experience severe shortages this year. Water supplies should be adequate but tight for most water users in the remainder of the basin. All water users should keep in touch with their local irrigation district and SCS field office for more specific information.

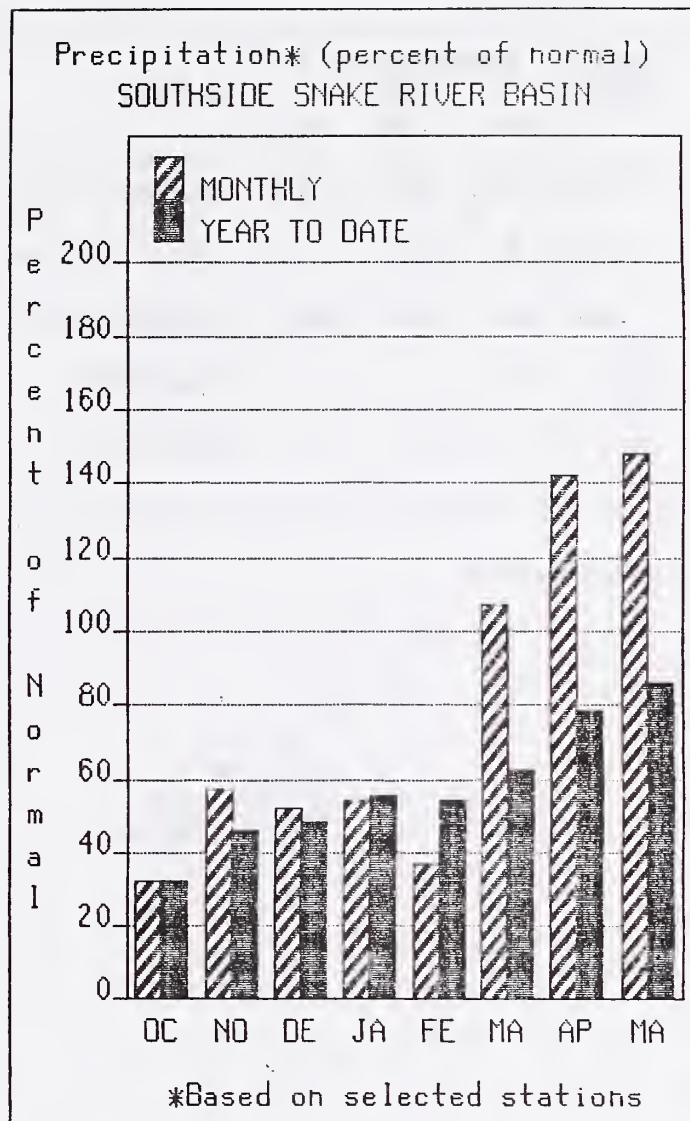
WILLOW CREEK, BLACKFOOT, UPPER SNAKE, AND PORTNEUF RIVER BASIN

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS			
RESERVOIR	USEABLE : CAPACITY :	** USEABLE STORAGE **			WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF	
		THIS YEAR	LAST YEAR	AVG.			LAST YR.	AVERAGE
ISLAND PARK	127.6	135.3	133.7	134.4	Camas-Beaver Creeks	1	0	0
GRASSY LAKE	15.2	15.0	15.0	13.5	Henrys Fork River	2	230	79
JACKSON LAKE	824.7	758.7	814.4	567.9	Teton River	3	166	118
PALISADES	1357.0	1072.8	1073.4	993.9	Snake above Palisades	13	146	94
AMERICAN FALLS	1700.0	1502.9	1142.9	1519.3	Snake above Jackson Lake	4	149	89
BROWNLEE	975.3	967.3	933.9	756.8	Gros Ventre River	2	136	130
BLACKFOOT	348.7	156.0	181.1	309.5	Hoback River	4	198	95
HENRYS LAKE	90.4	87.1	88.0	84.6	Greys River	2	195	76
RIRIE	96.5	75.7	63.6	83.9	Salt River	2	0	0
					Willow Creek	2	0	0
					Blackfoot River	2	0	0
					Portneuf River	2	0	0
					Toponce Creek	0	0	0

The average is computed for the 1961-1985 base period.

# Southside Snake River Basin

June 1, 1991



## WATER SUPPLY OUTLOOK

Cool temperatures in May have further delayed snowmelt along the southern edge of the state. As a result, June 1 snow surveys show a potentially misleading "improvement" in snowpacks over last month, when expressed as percent of average. Currently, snowpacks are 115% of average in Salmon Falls Creek and Bruneau basins. Summer streamflow volumes, however, are still expected to be well below normal. Very low reservoir storage in Salmon Falls, Oakley, and Owyhee Reservoirs further compounds the bleak water supply outlook. All of these factors point to the possibility of critically short water supplies this summer. All water users should keep in touch with their local irrigation district and SCS field office for more specific information.

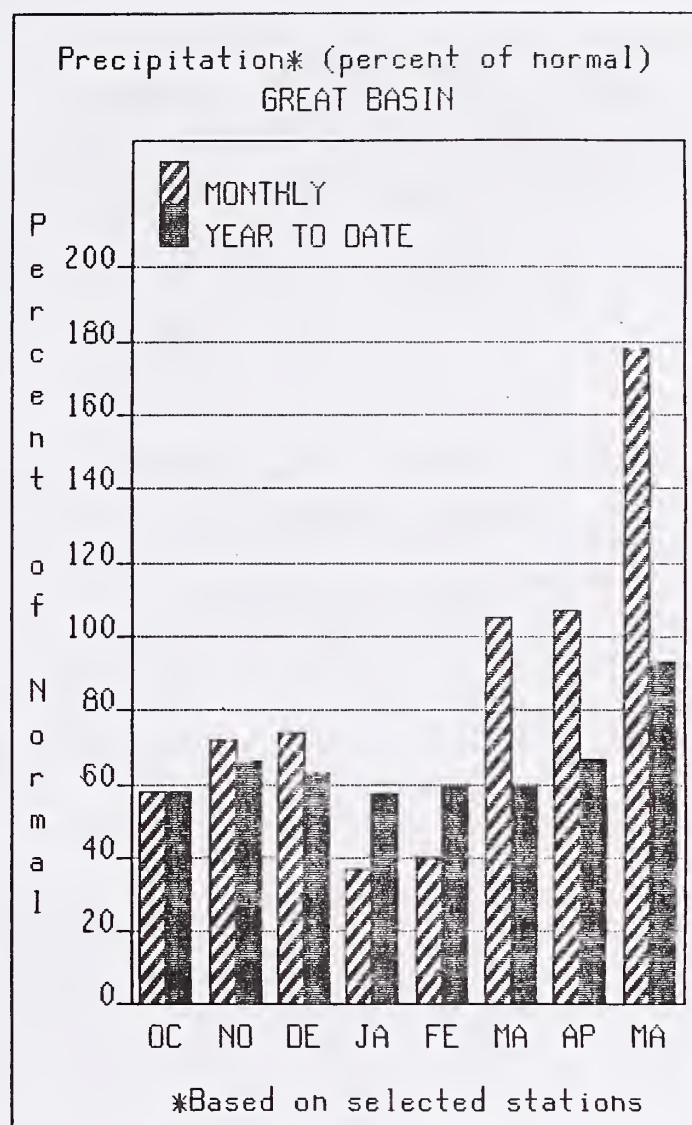
# SOUTHSIDE SNAKE RIVER BASIN

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS		
RESERVOIR	USEABLE : CAPACITY:	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.	WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR. AVERAGE
OAKLEY	77.4	18.6	16.6	42.7	Raft River	1	0 0
SALMON FALLS	182.6	39.1	43.7	94.9	Goose-Trapper Creeks	1	0 0
OWYHEE	715.0	322.8	473.4	603.8	Salmon Falls Creek	4	0 115
					Bruneau River	3	0 115
					Owyhee River	0	0 0

The average is computed for the 1961-1985 base period.

# Great Basin

June 1, 1991



## WATER SUPPLY OUTLOOK

Well above normal precipitation was received in the Great Basin during May, but the mountain snowpack continues to be well below normal. Currently, snowpacks range from 46% of average in Mink Creek basin to 79% in the Bear River basin. Storage is well below normal in Bear Lake (48% of average, 39% of capacity) and Montpelier Creek Reservoir (70% of average, 60% of capacity). The cool, wet weather during May and the delayed snowmelt at higher elevations may help extend the irrigation season somewhat, but all water users should consider the possibility of critically short water supplies in the Great Basin this summer. All water users should keep in touch with their local irrigation district and SCS field office for more specific information.

# GREAT BASIN

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS			
RESERVOIR	USEABLE ; CAPACITY ;	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.	WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF ----- LAST YR. AVERAGE	
BEAR LAKE	1421.0	555.1	737.9	1145.5	Bear River (above Harer)	2	0	79
MONTPELIER CREEK	4.0	2.4	1.9	3.4	Montpelier Creek	2	0	0
					Mink Creek	1	0	46
					Cub River	0	0	0
					Malad River	0	0	0

The average is computed for the 1961-1985 base period.

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# **Basin Outlook Reports**

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*For more water supply and resource management information, contact:*

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### *How forecasts are made*

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Soil Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

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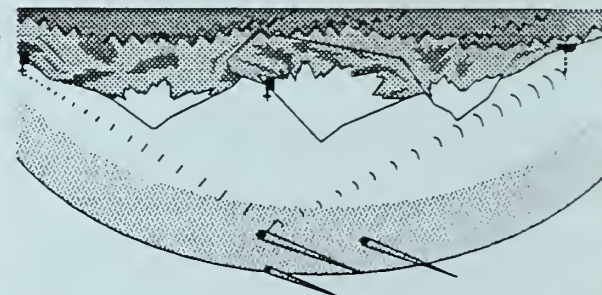
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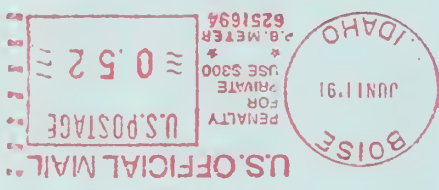
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# Basin Outlook Reports



In addition to basin outlook reports, a Water Supply Forecast for the Western United States is published by the Soil Conservation Service and National Weather Service monthly, January through May. Reports may be obtained from the Soil Conservation Service, West National Technical Center, 511 Northwest Broadway, Room 248, Portland, OR 97209-3489.

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